## Amendments to the Claims

1. (currently amended) A method for decoding a pair of quadrature signals, the method comprising:

obtaining a first sample of the quadrature signals from a detector on a moving object;

determining a last object direction of the moving object and a last state using the first sample;

obtaining a second sample, wherein a current state is determined using the second sample; and

generating an output responsive to the last sample, a last direction of the moving object and the current state, wherein the output adjusts for any skipped states.

2. (previously presented) The method of claim 1, wherein the method is performed for a pair of samples along an X axis of the object movement a pair of samples along a Y axis of the object movement.

3. (previously presented) The method of claim 1, wherein generating an output further comprises looking up the output in a positive look-up table if the object direction is positive; and looking up the output in a negative look-up table if the object direction is negative.

4. (original) The method of claim 1, wherein the quadrature signals are generated by a user input device.

5. (previously presented) The method of claim 1, wherein the method further comprises determining object motion and object rotation direction from the output.

6. (previously presented) The method of claim 3, wherein there are more than one positive look-up tables and more than one negative look-up tables and the selection of a look-up table depends upon a number of states that were skipped due to movement of the object.



PAGE 3/8 * RCVD AT 3/7/2005 5:46:56 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/6 * DNIS:8729306 * CSID:5032744622 * DURATION (mm-ss):03-04

7. (previously presented) The method of claim 1, wherein the method further comprises summing outputs generated during a predetermined period, and transmitting a sum for each axis of object movement at the end of the period.

8. (currently amended) A method for decoding a pair of quadrature signals, the method comprising:

obtaining a first sample of the quadrature signals at a first time from a detector on a moving object;

determining a last object direction of the moving object and a last state from the first sample;

obtaining a second sample of the quadrature signals at a second time from the detector on the moving object; and

determining an output signal using the last state, the last object direction and the current state, wherein the output signal adjusts for any skipped states.

9. (original) The method of claim 8, wherein the method further comprises summing output signals for a predetermined length of time.

10. (original) The method of claim 9, wherein the method further comprises providing an output signal to a host computer comprised of a sum of outputs.

11. (previously presented) The method of claim 8, wherein the last object direction is one of either positive or negative direction.

12. (previously presented) The method of claim 11, wherein different lookup tables are used depending upon the last object direction being positive or negative.

13. (currently amended) A computer readable medium, having included thereon software code that when executed, results in:

capture of a first sample of quadrature signals at a first time from a detector on a moving object;



PAGE 4/8 * RCVD AT 3/7/2005 5:46:58 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/6 * DNIS:8729306 * CSID:5032744622 * DURATION (mm-ss):03-04

capture of a second sample of the quadrature signals at a second time from the detector on the moving object;

determination of a last object direction of the moving object; and

generation of an output responsive to the first sample, the second sample and the last object direction, wherein the output adjusts for any skipped states.

14. (previously presented) The computer readable medium of claim 13, wherein the software code is contained in a downloadable file.

15. (previously presented) The computer readable medium of claim 13, wherein the software code, when executed further results in:

summation of outputs for a predetermined period of time, thereby creating a net change sum; and

transmitting the net change sum to a host computer.



PAGE 5/8 * RCVD AT 3/7/2005 5:46:56 PM [Eastern Standard Time] * SVR:USPTO-EFXRF-1/6 * DNIS:8729306 * CSID:5032744622 * DURATION (mm-ss):03-04